

TAKING THE LONG VIEW

The trust's vision for the preserve

Our long-term vision for the preserve begins with three parts: the changes we hope to see in the ecological condition of the preserve, the future public uses we envision for the preserve, and the physical infrastructure that we will need to develop in order to support those uses. Our comprehensive vision for the preserve will involve still more than this, as will be made clear in the balance of this framework, but these three components provide an essential foundation.

VISION FOR THE LAND

To say that the lands and waters of the preserve bear the imprint of the uses to which they have been put should not for a moment diminish one's appreciation of the preserve's high level of ecological health and intactness. Although there is plenty of room for improvement in the condition of the preserve, the conditions now prevailing are as good or better than those found in most, if not all, comparable landscapes throughout

the West. More significant is the fact that ecological systems are always changing—the rate of change may be fast or slow by human standards, but the fact of change is unavoidable. As a result, when we talk about how we hope the preserve will one day be, we need to be clear that we are not talking about a single, static set of conditions amounting to a kind of snapshot of the future. Rather, we are talking about a state of dynamism and renewal, something more like a long-running, continuous drama.

In general, the direction of ecological change within the preserve in recent decades has been positive, and beyond question, one of the most important responsibilities of the trust is to ensure that this process of ecological improvement continues.

The simplest and perhaps most useful way to understand improvement in this context is to define it as an increase in the capacity of natural systems to withstand natural and human disturbance. We call



View of the Valle Grande by T. Harmon Parkhurst, ca. 1935.

Same view, 1997. Note many ponderosa pines have been cut.



Photograph courtesy USGS Jemez Mountains Field Station

this quality resilience. A ponderosa pine forest that withstands burning without succumbing to crown fire is resilient. So is a grassland that recovers quickly and fully from drought or a stream that passes flood flows without abnormal erosion of its banks. Applying this measure to the realm of human impacts can be tricky, but in general, a landscape that can bear substantial human activity without showing ill effects would also be considered resilient.

A second concept is sometimes paired with resilience, although it is somewhat harder to define with precision. This is the idea of ecological integrity. An ecological system with a high level of integrity would have all of its native components and a minimal number of exotics present, and the keystone processes native to the ecosystem would be functioning properly.

Bearing these ideas in mind, it follows that a central goal of management at the VCNP should be to increase the resilience and, to the extent possible, the integrity of its ecological systems. A second central goal is entirely consistent with this. It is to ensure a high level of watershed stability throughout the lands of the preserve. This, in turn, means conserving the soils of the preserve and attaining proper functioning of its streams and watercourses.

These are management goals that the trust enthusiastically embraces. Even so, a qualifying word about the idea of management may be in order. Many people think of management as the exercise of conscious and thorough control over the thing being managed. A farmer manages his fields, for instance, by plowing, seeding, cultivating, and harvesting. He cannot control the weather, but he certainly controls much of what happens on the ground. Such a high level of control, however, is impossible and undesirable where natural or wild systems are concerned. Time and again, land “managers” have learned that the behavior of complex systems cannot be made to conform to a preconceived model. Although many management activities are susceptible to full control—the number of cattle allowed to graze a pasture, for instance—many others are not. Elk populations, for example, are shaped by many factors, including a herd’s learned behavior, weather, disease, events on adjacent lands, and the number, kind, and behavior of predators. When we talk about “elk management,” we are talking about an array of matters that are subject to high levels of uncertainty. The only variable that is “easy” to control is the number and behavior of human predators—hunters. Only rarely can the manipulation of this single factor produce desired

outcomes rapidly and with precision. Usually the attainment of wildlife management goals involves a protracted process of trial and error. The same is true in many other areas of land management: the things we control constitute only a subset of the many influences at work on the land. As a result, our management activities are often better conceived as efforts to nudge a system in a certain direction than as expressions of definitive control.

Whether a management action by the trust amounts to a weak nudge or a strong push, one theme should always be present, and that is our commitment to build into every activity and program opportunities to advance understanding of the systems in our care.

Streams and Fisheries

The vision for the streams and aquatic communities of the VCNP emphasizes the general restoration of stream function, including stabilization of banks and reduced sedimentation. As stream conditions improve, degraded channels will become deeper and narrower, and more pools will form. More problematic is the restoration of woody streamside vegetation (e.g., willows and alder), even where soils and stream gradient heavily favor such growth. This is a considerable challenge in an environment so rich in

elk. The impact of elk on woody vegetation is probably greatest in late winter and spring, the leanest time of the year, when grasses remain dormant and shrubs and deciduous trees (including young aspen), having initiated twig growth and bud formation, offer the best nutrition available to grazing and browsing animals. The long-term exclosure experiment launched by the trust in 2003 (and briefly mentioned in chapter 2) promises to enrich our understanding about what is possible and appropriate in the restoration of woody riparian vegetation along the streams of the preserve. (The experiment uses large, fenced exclosures to collect data on the response of riparian areas to three levels of use: no grazing by elk or cattle, grazing only by elk, and grazing by both elk and cattle. Complete sets of exclosures have been constructed at six locations within the preserve.)

The trust's vision for the streams and fisheries of the preserve also contemplates possible reestablishment of healthy populations of Rio Grande cutthroat trout and beaver within the preserve. Both of these restoration prospects, however, remain problematic. Reintroduction of beaver will remain impractical until the present paucity of suitable habitat is remedied. This would require reestablishment of woody riparian vegetation along the streams



Rio San Antonio in 1906 by Vernon Bailey.

Same view, 1997. Note improved condition of stream and increased density of trees.



Photographs courtesy USGS Jemez Mountains Field Station

where reintroduction would take place, as well as the establishment of aspen stands suitably close to those streams. The browsing pressure exerted by the preserve's large, resident elk herd greatly constrains the ability of the trust to achieve these necessary conditions.

The potential restoration of cutthroat trout poses different questions and challenges. For reintroduction to be successful, non-native trout must be entirely removed from the stream in question. Even if anglers fish out the majority of such fish, a poison or piscicide (restoration biologists currently recommend an antibiotic that disables a fish's respiratory system) or systematic electrocution is usually necessary to strip the stream of non-natives. Before such a program can be pursued, the effects on other stream life, including invertebrates and native non-trout such as minnows and darters, need to be fully understood, and if a piscicide is involved, the potential downstream effects past the area of reintroduction must be fully evaluated. The effects on other species, such as bald eagles, that may depend on fish for food also deserve consideration. Leading up to and throughout a reintroduction effort, public understanding and support is also vital, particularly the understanding and support of people living downstream from the waters to be treated.

Grasslands

A key goal in management of the preserve's grasslands is to halt or reverse the recent history of tree encroachment at the edges of the major valle systems. Accomplishing this will undoubtedly require the use of prescribed fire on a substantial scale. Another goal is to increase the relative abundance of native species in comparison to non-natives, such as Kentucky bluegrass, which currently constitute a large part of the grassland complex. It should be noted, however, that bluegrass, dandelion, and other non-natives have become "naturalized" components of the ecosystem and have remained so for at least a century and that areas with a high percentage of Kentucky bluegrass can contribute optimally in terms of watershed function. Nevertheless, bluegrass tends to increase as native bunchgrasses decrease, and the desired future condition for the preserve contemplates the gradual reestablishment of bunchgrasses in areas where they have declined. An additional goal should be to control invasive weeds, particularly Canada thistle. A very significant goal and challenge in the operation of an ecologically sustainable and economically viable ranching operation is balancing that program with the needs of wildlife, such as elk.

Forests

The trust will seek to restore the resilience, and particularly the fire hardiness, of the preserve's pine and mixed-conifer forests. These forests, under improved conditions, would be able to tolerate low-intensity ground fires without great risk that those burns might become stand-replacing crown fires. A likely and highly desirable outgrowth of increased fire hardiness would be greater diversity and abundance of the herbaceous forest understory (i.e., the grasses, forbs, and shrubs growing on the forest floor). The trust also hopes to maintain existing old-growth stands and recruit new stands of large, old trees. It would

seek in general to achieve a naturalistic mosaic of forest communities and in particular to increase the extensiveness and age diversity of aspen stands.

Wildlife

The vision for the preserve contemplates restoration of the attainable complement of native species and maintenance of an appropriate balance among them. The current population of deer, for instance, is far below historic norms and needs to increase. The current population of elk, meanwhile, is far greater than has previously been the case in the long-term natural history of the caldera, and the trust, together with

Many forest stands within the VCNP are overcrowded and feature unnaturally high fuel loads.



the New Mexico Department of Game and Fish and other partners, will strive to develop a working model for sustainable elk numbers in the caldera and the Jemez Mountains generally. Cutthroat trout and beaver have already been mentioned. Unfortunately, not every native species can be accommodated in the preserve. The VCNP is too small to provide adequate habitat for top predators such as wolf and grizzly bear, and given the constraints imposed by nearby human populations and activities, it is extremely unlikely that sufficient adjacent lands can be combined with the VCNP to make reintroduction of these species feasible. An additional and important component of the vision is to ensure continued wildlife viewing opportunities for the visiting public.

Wildlife and Livestock Interactions

The trust will seek to operate the preserve's working ranch in a manner that sustains range resources in balance with use by native herbivores and that also protects and supports the habitat needs of other wildlife. The specific intent will be to assess quantitatively the interactions of livestock and elk on the grazing lands of the caldera and determine their impacts on rangelands, forests, riparian vegetation, and stream ecosystems. The trust

will then develop appropriate management strategies that will permit a range of carrying capacities for elk and livestock, all the while ensuring that the natural resources of the caldera are not negatively influenced.

Aesthetics

It will be the goal of the trust to maintain and improve the aesthetic integrity of the preserve. The sweeping vistas of the preserve please and inspire everyone who beholds them. This must not change. As one contributor to a public meeting put it, "The valle is the vision." Protecting the aesthetic integrity of the VCNP will include preserving the natural soundscape, with its impressive silences, and avoiding light pollution that would impair the existing high quality of the night sky. It also will include maintaining the natural air quality.

PUBLIC USES AND SUPPORTING INFRASTRUCTURE

From the first days of the preserve's establishment, people have wanted to know when the VCNP will open for public access and use. They ask, when will its programs be in place and the gates swing wide to let the public in?

The expectation of a sudden and dramatic inauguration of visitor operations is understandable, but the actual development of the preserve



is following a different, subtler pattern. The opening of the preserve actually began in the summer and fall of 2002 with the commencement of interim programs for elk hunting, grazing, and guided hiking. Opportunities for cross-country skiing and snowshoeing became available the following winter. Through the course of 2003 other activities, including unguided hiking, fishing, horse-drawn wagon rides, and van tours, were added to this list, and the recreational components of the preserve's offerings are expected to expand steadily.

Three important factors have shaped the trust's incremental approach to the opening of the

preserve. The first involves its administrative and management capacity. No program runs or develops by itself; every meaningful effort requires the energies of qualified and dedicated people. Even when ample numbers of energetic volunteers are available to assist with implementation, staff personnel must be in place to direct and coordinate their efforts. The trust has built its staff as rapidly as possible, but the process of defining positions and then recruiting and selecting individuals to fill them has demanded considerable time. By the early summer of 2003 the roster of its full-time employees had reached 13, and its capacity for program

The trust initiated a program for unguided hiking in 2003.